

**Fourth Review Conference
of the Parties to the Treaty
on the Non-Proliferation of Nuclear Weapons**

NPT/CONF.IV/28
23 August 1990

Original: ENGLISH

Geneva
20 August-14 September 1990

LETTER DATED 23 AUGUST 1990 FROM THE DEPUTY HEAD OF DELEGATION,
FEDERAL REPUBLIC OF GERMANY, AND THE DEPUTY HEAD OF DELEGATION,
GERMAN DEMOCRATIC REPUBLIC, TO THE SECRETARY-GENERAL OF THE
FOURTH REVIEW CONFERENCE OF THE PARTIES TO THE TREATY ON THE
NON-PROLIFERATION OF NUCLEAR WEAPONS

The Delegations of the Federal Republic of Germany and the German Democratic Republic to the Fourth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons request that the annexed joint declaration on Non-Proliferation of NBC-weapons - as contained in the statements of His Excellency the Federal Minister for Foreign Affairs, Mr. Hans-Dietrich Genscher, and His Excellency the State Secretary for Foreign Affairs, Dr. Helmut Domke, delivered to this Conference on 22 August 1990 - be circulated as an official document of the Conference.

Annex

"The Governments of the Federal Republic of Germany and the German Democratic Republic reaffirm their contractual and unilateral undertaking not to manufacture, possess or have control over nuclear, biological and chemical weapons. They declare that the united Germany, too, will abide by this obligation.

Rights and obligations under the instruments of the Treaty of 1 July 1968 on the Non-Proliferation of Nuclear Weapons will continue to apply to the united Germany. The united Germany will seek the continued validity of the Non-Proliferation Treaty beyond 1995 and supports the strengthening of the non-proliferation régime.

At the Geneva Conference on Disarmament, the united Germany will strive for a comprehensive, worldwide and verifiable ban on chemical weapons at the earliest possible date and intends to be one of the original signatories of the convention."

**Fourth Review Conference
of the Parties to the Treaty
on the Non-Proliferation of Nuclear Weapons**

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LETTER DATED 22 AUGUST 1990 FROM THE ITALIAN DELEGATION TO
THE FOURTH REVIEW CONFERENCE OF THE PARTIES TO THE TREATY
ON THE NON-PROLIFERATION OF NUCLEAR WEAPONS

Working Paper

In the present juncture of the disarmament process, there are aspects of nuclear arms control which deserve new and careful attention.

Among those the question of possible peaceful utilization of military nuclear materials for the production of electrical power deserves to be seriously considered by the Conference.

As anticipated by the Head of the Italian delegation in his statement of 21 August, I would like to circulate herewith a preliminary study, aimed at setting some background elements for the Conference as a conference document.

Geneva, 22 August 1990

(Signed):

Annex

PEACEFUL UTILIZATION OF MILITARY NUCLEAR MATERIALS
FOR THE PRODUCTION OF ELECTRICAL POWER

Foreword

1. Public opinion worldwide has followed with high interest and consensus the decision of the two main nuclear Powers, United States and Soviet Union, to proceed to an agreed reduction of their respective huge nuclear arsenals, which have represented an impending threat.

On December 1987, with the enforcement of the INF Treaty for the dismantlement of short- and medium-range missiles, United States and Soviet Union have set aside 4,000 warheads.

With the future START Agreement on the reduction of strategic nuclear warheads, which should be concluded before the end of this year, it is calculated that an additional 8,000 nuclear warheads will become available, having moreover a substantially higher specific power. The number of all the warheads existing and operational in military deposits will then be reduced by about 30 per cent.

To the nuclear systems eliminated on the basis of INF and START agreements, those must be added, especially of the short range type, which the two super-Powers have declared to withdraw from operation, and which must be presumed as removed from military uses.

It is then a matter of an amount of material by now very near to 50 per cent of the existing one, with the perspective of further reductions.

2. It is a strong interest of world-wide public opinion to be reassured on the final destination of the explosive fissile material made available by the nuclear disarmament process. This for two reasons: first of all because nuclear disarmament can be considered irreversible only through the elimination of the warheads, secondly for the benefits that could derive in the form of economic development obtainable from the energy tied up into the warheads.

These expectations have encouraged studies and evaluations both on the technological feasibility of the conversion of nuclear warheads, and on the economics of such conversion.

The non-governmental Italian organization STES (Scientists and Technologists for the Ethics of Development) undertook to carry out a series of studies on the aforesaid problems, encouraged by several motivations:

- First of all, for the high ethic and symbolic significance of the destination of the energy coming from nuclear warheads to the development of countries in the south of the world. This destination would make even more appreciated the sense of nuclear disarmament.
- Secondly, the firm belief that such operation must be favoured not only by the nuclear Powers which will make available nuclear material, but also by technical and industrial organizations of developed

countries, which will be able to supply their co-operation. In this field, STES has found large availability of scientific, technological and industrial institutions in Italy.

- In the third place, to favour those authoritative opinion currents, which are moving in the same direction in the international field especially in the United States of America, but also in the Soviet Union. The recent studies on these subjects, carried out by the Congressional Research Services of the United States, and by the Federation of American Scientists, have been taken into account, and have represented a source of encouragement.
- In the Italian framework, studies and closer examinations have been also undertaken by the highest scientific organization: The "Accademia Nazionale dei Lincei".
- STES resumes in the following pages the preliminary conclusions of the studies that it is carrying on with the co-operation of the major technical and industrial organizations in Italy. Such studies will be made available by the end of this year, and will be submitted for evaluation to the interested international organizations.

E N E L - E N E A - A N S A L D O

PROJECT

"NUCLEAR DISARMAMENT - ENERGY FOR AN INDUSTRIAL
STRATEGY - GLOBAL DEVELOPMENT"

PEACEFUL UTILIZATION OF MILITARY NUCLEAR MATERIALS
FOR THE PRODUCTION OF ELECTRICITY

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PEACEFUL UTILIZATION OF MILITARY NUCLEAR MATERIALS
FOR THE PRODUCTION OF ELECTRICITY

1. FOREWORD

In December 1987, when the INF Treaty for the elimination of short- and medium-range missiles came into force, the United States and USSR have put aside about 4,000 nuclear warheads.

With the future START Agreement on the reduction of strategic nuclear weapons, which should be concluded within the end of 1990, the number of nuclear warheads of the two super-Powers is expected to be reduced by about a further 12,000 units. Then the number of all the warheads present and operational in the arsenals will be reduced by about 30 per cent.

An approach for eliminating the nuclear warheads, while utilizing their materials, is that of "burning" the fissionable materials they contain in the nuclear power stations for the production of electricity. This goal could be achieved following the cycle described below:

- in the military environment, the nuclear warheads are dismantled to recover the high-enrichment fissionable materials;
- always in the military environment, the materials to be reused for civil purposes is submitted to a first dilution up to enrichment levels such as not to permit their direct reuse in the nuclear warheads (the threshold value for the uranium is represented by 20 per cent enrichment);
- finally, when introduced in the civil market, the fissionable materials are commercialized, under the IAEA supervision, and further diluted, and transformed in fuel for the existing nuclear power plants, by the civil industrial organizations.

2. RECONVERSION OF THE NUCLEAR MATERIAL FROM THE NUCLEAR WARHEADS

2.1 THE ARSENALS

According to T.B. Taylor, */ the total number of nuclear warheads present in the arsenals of the two super-Powers would be 56,000 and the quantities of nuclear materials they contain would be in total: 900-1,330 tons of uranium (in the metal form, with a 93 per cent U-235 enrichment), 200 tons of high Pu-239 content plutonium, and 200 kgs of tritium, equally distributed between the two countries. The other nuclear Powers: United Kingdom, France and the People's Republic of China, would have a further 1,500 nuclear warheads in total.

*/ T.B. Taylor: "Verified Elimination of Nuclear Warheads", Science and Global Security, 1989, vol. 1.

2.2 URANIUM UTILIZATION

The utilization of military uranium as a fuel in the existing nuclear stations is a process technically and commercially practicable on the basis of the present knowledge.

The whole peaceful utilization process of the military uranium would consist of a first stage, relating to the warheads dismantlement, and an isotope-dilution process of the fissionable material such as to reduce the U-235 enrichment from 93 per cent to values consistent with its commercialization and, however, not exceeding 20 per cent. Both operations are to be carried out in the military environment.

The second stage of the reconversion process would consist of the passage of the so diluted uranium from the military to the civil environment to be first stored, under the IAEA supervision, and then transformed in nuclear fuel. More specifically, the following stages are to be provided: a uranium dilution process up to the values required by the power stations, in order to obtain an alternative material to that produced by the enrichment process through the technologies available; the fuel fabrication, and finally the material burning in the existing nuclear power plants.

For the whole reconversion process, due considerations are to be made on the significant economic and commercial problems in connection with the large quantities of military uranium made available.

More specifically an evaluation is to be made of:

- in the first place, the impact of the fuel originated from the nuclear disarmament on the nuclear market;
- in the second place, the effect relating to the introduction of the dilution process for the production of uranium to be destined to the nuclear power stations, in presence of the existing gaseous diffusion and ultracentrifugation enrichment plants as well as those which are expected to use the future laser technology;
- in the third place, while relying on the economic estimates already available, an evaluation is to be made of the total economic advantages obtainable from the reconversion operation, by assessing the cost of the commercial reconversion process in a civil environment and the profits from the electric power generated by using the uranium from the nuclear warheads.

2.2.1 Commercial dilution process of the uranium from the nuclear warheads

Uranium dilution is a process commercially and technically proved and would also apply to the uranium made available from the nuclear Powers with isotope enrichment values acceptable by the market (below 20 per cent in U-235).

The material by which the high-enrichment uranium from the disarmament may be diluted to be converted into a commercial nuclear fuel, could be either

the natural uranium from the ores, or the depleted uranium constituting the "tails" of the existing enrichment plants, or the depleted uranium recovered from the depleted fuel reprocessing plants.

In the first type of dilution, the natural uranium (with 0.71 per cent of U-235 content) would be used so producing more nuclear fuel than that produced should the "tails" uranium be used which typically contains an 0.25 per cent of U-235). But this would require the purchase of new natural uranium from the ores and a part of the uranium already available would not be recovered.

In the second type of dilution, large quantities of depleted uranium "tails" would be used from the existing enrichment plants and with a commercial value quite null. This approach would valorize the U-235 present in an average concentration of 0.25 per cent and no uranium supplies from the ores would be required.

The third type of dilution would utilize the depleted uranium from the reprocessing plants that, however, presents a cost connected to the same reprocessing plants.

The dilution process operations of the uranium made available by the nuclear disarmament may be carried out on a commercial scale in the existing fuel fabrication plants appropriately modified in a few parts to permit the processing of the uranium with an enrichment more elevated than that of the nuclear fuel destined to the power station, and particularly those equipped with LWRs which represent the more spread technology.

2.2.2 The uranium of the nuclear warheads and the enrichment plants

In evaluating the economic advantages resulting from the use of the uranium from the nuclear warheads obtained by dilution compared to that produced by the existing enrichment plants, the following consideration is to be made first:

- at present 1 kg of 3.3 per cent enriched uranium costs to the producers (for the procurement of natural uranium and separation work) a little more than \$US 1,000, whereas the cost of the dilution of the military uranium to obtain 1 kg of 3.3 per cent enriched uranium may be evaluated around \$US 100. Thus, to the uranium destined to the LWR nuclear power stations, obtained by dilution of the military uranium, we may assign a saving of \$US 900 to 1,000 (no costs being assigned to the operations carried out in the military environment).

Moreover, as for the enrichment plants, it should be pointed out that since now, also considering the part reserved to military uses, we are in presence of an excess of enrichment capacity, that is an excess of potential production of Separative Work Units (SWU), in that the enrichment plant in operation can supply about 40 million of SWU per year, against the present demand of about 30 million. But we must consider that in the coming years some plants will cease their production cycle and various diffusion plants should be shut down for reasons of non-economics compared to the more advanced centrifugation plants. In fact, considering the economic advantage of a gradual replacement of the less competitive plants, new enrichment plants are planned, using laser and ultracentrifugation technologies. Thus the economic and technical benefits resulting from the possibility of sharing

during time the investments required for the construction of said enrichment plants are to be examined, having recourse, in the meantime, to the procurement of uranium by dilution of the uranium originated by nuclear disarmament.

2.2.3 Adjustment of the fuel fabrication plants for the use of nuclear warheads uranium

With reference to the nuclear fuel fabrication plants, the well proved powder-mixing technique (and the normal sintering process) could ensure the fabrication of fuel elements with an appropriate enrichment, it being understood that a technique and rules adjustment is required as of the plant section that has to work on more enriched materials. In addition, this would contribute to determine the commercial value of the uranium of military origin.

2.2.4 The nuclear warheads uranium and the nuclear fuel market

Globally, the nuclear installed capacity will pass from a little more than 315 GWe as of January 1990 to about 400 GWe in 2005; 85 per cent of this capacity may be referred to LWR nuclear power stations.

According to an estimate which takes into account the stations under construction, the stations already ordered as well as the plants that, having concluded their operation cycle, will be decommissioned, the number of stations in operation (which at present is 420), will reach 530 units by 2005 (with an increase of 110 units compared to the current level). Ninety per cent of this increase is represented by LWRs.

The demand of uranium in form of U_3O_8 will increase, according to an almost linear trend, from 50,000 t in 1990 to about 70,000 t in 2005; accordingly, the SWU required all over the world will pass from about 30 million to a little more than 40 million.

In integral terms, the U_3O_8 demand in the period 1990-2005 may be evaluated at about 890,000 t, and the separative work demand at about 530 million SWU. To the end of the evaluation of the market growth, it is interesting to observe that the new plants that will be installed from today to 2005, will require in the whole 150,000 t of natural uranium in the form of U_3O_8 and 80 million SWU; including both the yearly demand and the fixed assets for the first charges.

The dismantlement of 30 per cent of the warheads (see para. 1), during the 15-year period considered in this analysis, can make available the equivalent of about 12,000 t of 3.3 per cent enriched uranium oxide, which represents 11 per cent of the fuel required to feed all the existing LWR stations in the next 15 years. Moreover, it is interesting to observe that the introduction of the enriched uranium from the nuclear disarmament in the market, does not fully satisfy the additional demand of the new plants, but only covers its 56 per cent. This, however, leaves to the natural uranium market a growth on the order of 1 per cent/year.

In terms of separative work, the same considerations apply. The dilution process does not permit, obviously, the recovery of all the work spent for the high-enrichment uranium production; the actual savings are measured on the basis of the separative work that would have been carried out in order to

obtain the 3.3 per cent uranium starting from natural uranium: this corresponds to about 63 per cent of the demand relating to the installation and operation of the new stations, thus also in the case of the enrichment market, room is left to a reasonable increase.

On the basis of these data we may conclude that the fuel market situation does not arouse problems, all the more so as we consider the fact that the uranium originated from the disarmament would be introduced following the gradualness imposed by the nuclear disarmament treaties and the nuclear warheads dismantlement operations.

2.2.5 The burning of the fuel, originated by the nuclear disarmament in its whole, in the nuclear power stations

The considerations made in 2.2.2, 2.2.3 and 2.2.4, prudentially referred to the reduction assumptions mentioned in paragraph 1, can be applied to the general context. The nuclear power stations, and the related installed power, in the world, which can burn the fuel originated from the disarmament are those already in operation, i.e. 420 units corresponding to 315 GWe (as of 1 January 1990). From these a few may be excluded, for economic reasons only, such as natural uranium, high-temperature gas reactor, and fast reactor plants.

The electric power obtainable from the uranium of all the declared nuclear warheads would be equal to more than 10,000 milliard kWh equivalent to the world electric power produced at present in a year.

The minimum time required for burning the uranium from the disarmament by the existing nuclear plant mix, without exclusions, would exceed six years.

Not all the existing nuclear stations belong to countries having an advanced and safe nuclear industry (i.e. countries which have operated this type of plant for a number of years, and participate, at least, in the non-proliferation Treaties and are IAEA members). Their exclusion extends the technical times for the burning of the fissionable materials from the nuclear disarmament.

Moreover, there may be considerable increases in the extractable energy, should variations in the fuel enrichment and burning rate be adopted in the same stations as technically possible.

2.2.6 General economic evaluation of the reconversion of nuclear warheads into electric power

The economic gain from the reconversion of the military uranium into energy through the utilization of all the existing nuclear power plants, and leaving out of consideration the times required, is to be evaluated taking into account the following items:

- cost of the industrial dilution process of the high-enrichment uranium made available for civil uses;
- cost associated to the adjustment of the fuel fabrication plants;
- revenues from the sale of the electric power produced by each station, or value equivalent.

A very general estimate, confirmed from data found in the literature, indicates a gross revenue (excluding the expenses related to the commercial dilution and fabrication plant adjustment) of \$US 50 billion by utilizing the uranium of all the warheads. From the aforesaid economic evaluation are also excluded the costs related to the warheads dismantlement and high-enrichment uranium dilution up to the values indicated for commercial use, that should be within the military responsibility. Obviously, the prudential assumptions made in the foregoing about the number of warheads dismantled as well as the limitation of the period considered reduce accordingly this value. Even so, very significant figures are involved: even if we take into account the uncertainty of economic nature relating to the whole reconversion process they are likely to be in the range of \$US 10 billion in the period 1990-2005.

2.3 PLUTONIUM UTILIZATION

So far, there are 200 t of plutonium contained in the nuclear warheads (see 2.1), to which we should add the quantities that at present are obtained from the plants reprocessing the fuel from the nuclear reactors and those already stored under the international control.

The growing quantity of plutonium present in the reprocessing plants together with the difficulties encountered in their management (involving problems of physical protection and non-proliferation) recently led a number of electric operators in Europe and in Japan to reconsider, for the light-water reactors, the possibility of utilizing the mixed-oxide fuel (MOX) in which the plutonium mixed with natural uranium (or depleted uranium) ensure the required concentration of fissionable nuclides. The construction of plants for the fabrication of said fuels is under way in Belgium, France and the Federal Republic of Germany. By the end of the 1990s, a total production capacity of 250 t/year of MOX will be available in Europe (this means a 5-7 t/year consumption of plutonium). We must consider the contribution the fast reactors offer at present, and can be given in the future, to the plutonium burning, notwithstanding their complex technology.

The use of military plutonium for civil uses does not seem to be very attractive at present: in fact, the plutonium market is not yet fully developed.

The utilization of military plutonium for civil purposes could be of interest in the future only in case of a strong commercial development of the MOX and fast-reactor technologies. Therefore, it would remain the responsibility of the two super-Powers and be submitted to bilateral controls - and international controls, if required - waiting for more favourable conditions.

2.4 TRITIUM UTILIZATION

Tritium is produced in special reactors and its half-time is 12.3 years. Due to its comparatively short average life, it does not present meaningful storage and control problems: by interrupting its production, the tritium existing in the arsenals would gradually reduce.

Tritium civil applications are practically found only in the R&D programmes in the field of controlled nuclear fusion.

Just in these days the two super-Powers are being started with Europe and Japan, a co-operation to reach, by the second half of the 1990s, a large demonstration machine: the ITER. This programme would require the use of about 60 kg of tritium that could be supplied by the two super-Powers, in the framework of the nuclear disarmament process.

3. CONCLUSIONS

The utilization of the nuclear materials present in the nuclear warheads under disarmament is an operation industrially practicable as far as the uranium is concerned. The uranium should be diluted from the original high concentration up to the values required for the fuel to be destined to the existing nuclear power plants.

In this way, from the uranium of all the nuclear weapons we may first of all obtain a quantity of electric power exceeding 10,000 milliard kWh, equivalent to that consumed by the world population during a year. Thus, introducing a financial resource of at least \$US 50 milliard in the world economy, involving the nuclear industry of various countries in the process of burning the uranium from the nuclear warheads, for at least six years.

Also in the case of prudential assumptions on the number of nuclear warheads available after their dismantlement in the next 15 years, the economic advantages would be of the order of about \$US 10 billion.

Owing to its considerable extension the uranium market can absorb the uranium from the nuclear warheads as the disarmament process develops, at a cost of about \$US 100/kg against \$US 1,000/kg of that produced by the existing enrichment plants (3.5 per cent uranium). The nuclear power producers may also rely on an availability of comparatively high-enrichment uranium as base material, considering the present trend towards an increase if the enrichment values and reactor burning rate.

As for plutonium, on the contrary, there are at present limited possibilities to introduce it in the civil market because, in addition to a depressed market situation, the associated risks of nuclear proliferation persist as well as the technical and industrial problems related to the processing of this material.

Finally, as for tritium, it can be used in large quantities in the field of industrial R&D on the controlled nuclear fusion. Therefore, the reconversion of the materials (particularly uranium) contained in the nuclear warheads, for electricity production, is a process technically and economically possible in the framework of an industrial development strategy aiming at the peaceful utilization of the nuclear source.

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**Fourth Review Conference
of the Parties to the Treaty
on the Non-Proliferation of Nuclear Weapons**

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LETTER DATED 23 AUGUST 1990 FROM THE DEPUTY HEAD OF THE
DELEGATION OF YUGOSLAVIA TO THE SECRETARY-GENERAL OF
THE FOURTH REVIEW CONFERENCE OF THE PARTIES TO THE
TREATY ON THE NON-PROLIFERATION OF NUCLEAR WEAPONS

On behalf of H.E. Mr. Marko Kosin, Ambassador, Permanent Representative of the SFR of Yugoslavia to the United Nations Office at Geneva and Co-ordinator of the Non-Aligned and Other States Parties, may I kindly ask you Sir, to have the attached statement of the Non-Aligned and Other States Parties to the NPT not taking part in the East European or Western Groups circulated as the official document of the IV RC NPT.

Annex

STATEMENT ON BEHALF OF THE NON-ALIGNED AND OTHER
STATES PARTIES TO THE NPT NOT TAKING PART IN THE
EAST EUROPEAN OR WESTERN GROUPS BY THE CO-ORDINATOR
OF THE GROUP, AMBASSADOR MARKO KOSIN OF YUGOSLAVIA

1. The Non-Aligned and Other States Parties to the Non-Proliferation Treaty not taking part in the East European or Western Groups stress the importance of the NPT as a legally binding multilateral instrument which confirmed the urgency of the cessation of the nuclear arms race and of nuclear disarmament. The full implementation of the Treaty is an important step towards nuclear disarmament, world peace, global and regional security. The NPT Treaty is not an end in itself. The declared aim of the Treaty is not only to achieve nuclear disarmament but also general and complete disarmament under strict and effective international control. The number of countries that have adhered to the Treaty has significantly increased since its entry into force. Non-nuclear-weapon States Parties to the Treaty have established an important international norm of non-acquisition and non-possession of nuclear weapons or other nuclear explosive devices by fulfilling the obligations undertaken by them in the Treaty.
2. Recent political developments underscore further the importance of a strict and faithful compliance with the NPT in its entirety. It has become evident that the enhancement of peace and international security can be achieved by political means and through the widest possible international co-operation in accordance with the United Nations Charter. Attempts to justify nuclear deterrence and the need for the nuclear arms race run contrary to these positive developments and the spirit of the NPT.
3. Recognizing the positive elements and effects brought about by the recent agreements and ongoing negotiations in the nuclear disarmament field, we regret that the modernization and qualitative improvement of nuclear weapons systems continue unabated. Vertical proliferation of nuclear weapons in this aspect by nuclear-weapon States continues contrary to the fulfilment of the purposes of the preamble and of the provisions on nuclear disarmament as laid down in the Treaty.
4. At the same time, horizontal proliferation of nuclear weapons and the spread of nuclear weapons capability among certain States not parties to the NPT poses a serious threat to the non-proliferation régime and underlines the magnitude and the gravity of the problem.
5. The Non-Aligned and Other States Parties underline the importance of the basic goals and commitments undertaken under the NPT Preamble and provisions towards general and complete disarmament under strict and effective international control, namely:
 - to avert the danger of nuclear war and to take measures to safeguard the security of peoples;

- to achieve at the earliest possible date the cessation of the nuclear arms race and to undertake effective measures relating to nuclear disarmament; and

hence:

- achieve the discontinuance of all nuclear testing for all time and to undertake without further delay negotiations to this end;
- prevent the proliferation of nuclear weapons or other nuclear explosive devices;
- further the easing of international tension and the strengthening of trust between States, in order to facilitate the cessation of the manufacture of nuclear weapons, the liquidation of all their existing stockpiles and the elimination from national arsenals of nuclear weapons and the means of their delivery.

6. As provided for in the preamble and the provisions of the Treaty, the Non-Aligned and Other States Parties to the NPT believe that the possibility of a significant extension of the Treaty as the most widely accepted non-proliferation instrument will be enhanced by the effective implementation of the Treaty by 1995 and in particular its obligations laid down in it relating to nuclear disarmament.

7. Consequently, it is urgent to take the necessary steps to consolidate the effectiveness of the NPT by, inter alia, reaffirming and strengthening its authority, to ensure the universality of the Treaty and the implementation of its preamble and provisions, especially by the depository States, namely:

(a) to institute as a provisional measure pending the conclusion of a Comprehensive Nuclear Test Ban Treaty an immediate moratorium on all nuclear testing which plays a crucial role in the extension of the Treaty:

(b) to fully support the PTBT Amendment Conference and to undertake full scope negotiations on a CTBT in the Ad hoc Committee established this year by the CD;

(c) to start negotiations in the CD under items 2 and 3 of its agenda with the active participation of all nuclear-weapon States;

(d) to declare an immediate moratorium on and to cease completely the production of weapons grade fissionable material;

(e) within the context of the NPT to begin immediate negotiations with the view to an early conclusion of a legally binding multilateral instrument of guarantees to non-nuclear-weapon States against the use or threat of use of nuclear weapons. At the same time to intensify negotiations in the CD with a view to concluding an international convention to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons;

(f) to stop the deployment of nuclear weapons in the non-nuclear-weapon States and withdraw, as soon as possible, nuclear weapons already deployed there;

(g) to respect existing agreements on nuclear-weapon-free zones and support regional efforts aimed at establishing nuclear-weapon-free zones;

(h) to intensify the negotiations towards further reduction and elimination of all types of nuclear weapons and the means of their delivery providing the earliest participation of all nuclear-weapon States;

(i) to prevent an arms race in outer space and to undertake immediate negotiations to this end;

(j) to reinforce and strictly respect the commitment not to supply with nuclear weapons related material, technology and services to States not parties to the Treaty which have nuclear facilities not safeguarded by the IAEA.

8. The Non-Aligned and Other States Parties to the Treaty declare that peaceful nuclear co-operation including technology transfer is a commitment laid down in article IV of the NPT. They regret the unsatisfactory realization of such a commitment as there are many unjustified restrictions and constraints imposed on developing non-nuclear-weapon States Parties in this regard. It is their belief that those States Parties which are in the position to do so should, in conformity with article IV of the NPT:

(a) promote co-operation between States Parties in the peaceful uses of nuclear energy;

(b) reaffirm their acceptance that all States Parties are entitled to participate in the fullest possible exchange of scientific information and to contribute to the further development of application of atomic energy for peaceful purposes;

(c) to facilitate the fullest possible exchange of equipment, material and technological information for the peaceful uses of nuclear energy with the right of all States Parties to participate in it;

(d) to enhance the role of the IAEA and provide better assistance through the IAEA to developing countries, and favourable financing by international institutions to promote the peaceful uses of nuclear energy and other nuclear technology applications;

(e) to provide adequate balance of IAEA financial funds for its assistance and safeguard functions;

(f) to provide economic incentives to the developing countries that are parties to the NPT not only in nuclear energy but also in the other energy sources and accord special attention to the least developed countries;

(g) give priority to the NPT member developing countries in securing co-operation on nuclear energy application on food and agriculture, human health, industry, physical and chemical sciences, nuclear safety, etc.

9. Non-proliferation measures should not jeopardize the full exercise of the inalienable rights of all States Parties to apply and develop their programmes for the peaceful uses of nuclear energy for economic and social development in conformity with their priorities, interests and needs.

Non-nuclear-weapon States Party to the Treaty should primarily have access to and be free to acquire technology, equipment and materials for peaceful uses of nuclear energy, taking into account the particular needs of the developing countries.

**Fourth Review Conference
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Working paper submitted by Egypt

I. INTRODUCTION

Egypt attaches great importance to the non-proliferation Treaty which it considers as the cornerstone of the non-proliferation régime. Furthermore, the Treaty is an important means to safeguard international peace, strengthen the security of States and promote international co-operation in the field of peaceful uses of nuclear energy. The parties to the Treaty, at the NPT Fourth Review Conference should reiterate their strong commitment, not only to the provisions of the Treaty, but also to the fulfilment of its purposes and objectives.

The following proposals are intended to consolidate the effectiveness of the NPT, strengthen the non-proliferation régime, and ensure the universality of the Treaty.

**II. THE CONSOLIDATION OF THE EFFECTIVENESS OF THE
NON-PROLIFERATION TREATY**

II.1 - SECURITY ASSURANCES FOR NON-NUCLEAR WEAPON STATES

Egypt believes that the most effective guarantee against the use or threat of use of nuclear weapons is nuclear disarmament under effective international control. Pending the attainment of that goal, security assurances are an indispensable measure in this regard.

The Conference on Disarmament in Geneva has a mandate to negotiate "effective international arrangements" to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons.

In this respect, the Third Review Conference expressed regrets that such arrangements were not reached and called upon all States, and in particular the nuclear-weapon States, to continue the negotiations devoted to the search for a common approach acceptable to all, which could be included in an international instrument of a legally binding character.

Hence, it would be advisable that the Fourth Review Conference consider:

II.1.A - Calling upon the United Nations Security Council to adopt a new resolution on security assurances. The proposed resolution should include credible assurances beyond what Security Council resolution 255 of 1968 provided for, in particular:

II.1.A.i - A clear indication of the mandatory action to be adopted by the nuclear-weapon States and the Security Council to redress a situation where a non-nuclear-weapon State party to the Treaty is the object of a nuclear attack or threat of attack.

II.1.A.ii - The obligation to pay reparation or compensation to the victim.

II.1.A.iii - The obligation by States to provide immediate assistance to the victim.

II.1.B - The issue of security assurances should be dealt with by the Conference in light of the existing peril emanating from the practice of certain nuclear threshold countries of an undeclared and ambiguous nuclear policy against their regional neighbours. That situation is further confounded by the refusal of such nuclear threshold States to join the NPT, present the necessary assurances, and allow for verification measures under effective international control.

II.1.C - In this regard, certain obligations are a prerequisite for effective security assurances:

II.1.C.i - A commitment by all States party to the NPT not to use or threaten to use nuclear weapons from their territories against any State party to the NPT which does not possess or place nuclear weapons on its territories.

II.1.C.ii - Support of the imposition of sanctions against any State, party or non-party to the Treaty which uses nuclear weapons against a non-nuclear-weapon State party to the Treaty which does not place nuclear weapons on its territories.

II.1.C.iii - All nuclear-weapon States should not allow a non-nuclear-weapon State not party to the NPT, but has the capability to use nuclear weapons to attack or threaten to attack a non-nuclear-weapon State party to the NPT.

II.1.C.iv - All States party to the Treaty should provide assistance, if requested, to any non-nuclear-weapon State party to the Treaty that does not maintain nuclear weapons on its territory, and has been attacked or threatened by the use of nuclear weapons.

II.2 - NUCLEAR NON-PROLIFERATION AND NUCLEAR DISARMAMENT

In preambular paragraph 9 of the NPT, the parties declared their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament.

In article VI of the Treaty, the parties undertake to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.

Egypt welcomes the progress achieved in the field of disarmament, and in particular nuclear disarmament. In this context, the recent agreements between the two super-Powers are considered a positive contribution. However, the fulfilment of the purposes of the preamble and the provisions of the Treaty requires the achievement of further progress.

Egypt calls upon all nuclear-weapon States to seize the prevailing propitious international climate with a view to attaining general and complete disarmament and in particular nuclear disarmament.

In this respect, those States are encouraged to declare unilaterally or collectively at the Fourth Review Conference, the nuclear disarmament agreements they envisage negotiating and concluding before the next extension conference in 1995, in conformity with their special responsibilities enshrined in article VI of the Treaty.

In this regard, the Conference on Disarmament should seek ways and means to accelerate this progress.

II.3 - REGIONAL NUCLEAR DISARMAMENT

Considering that the establishment of nuclear weapon-free zones is an important disarmament measure, the conclusion of such an arrangement particularly in zones afflicted with regional conflict, is of utmost necessity to enhance international peace and security. It is pertinent to recall that the Third Review Conference, inter alia, recognized that the co-operation of the nuclear-weapon States is necessary to ensure the maximum effectiveness of any treaty arrangements which aim at establishing nuclear weapon-free zones. The nuclear-weapon States are invited to assist regional efforts to create nuclear weapon-free zones.

From this premise the OAU adopted its first declaration on the denuclearization of Africa in Cairo in 1964. Since 1974 Egypt has also been annually presenting to the General Assembly a proposal for the establishment of a nuclear weapon-free zone in the Middle East which has been adopted by consensus since 1980.

At this juncture it is important to recall Egypt's most recent proposal to establish a Zone Free from Weapons of Mass Destruction in the Middle East as an important contribution aimed at consolidating regional as well as international peace and security.

In this respect the following should be taken into consideration:

II.3.A - The nuclear-weapon States and all other States are requested to participate actively and render assistance to States party to regional conflicts with a view to reaching arrangements for establishing nuclear weapon-free zones in their respective regions.

II.3.B - Nuclear-weapon States should refrain from extending assistance in the nuclear, scientific or technological fields to non-NPT States parties to regional conflicts.

II.3.C - All States exporting nuclear installations, equipment, information or materials to States party to regional conflicts should ensure that such transfers should be subjected to the IAEA full-scope safeguards.

II.3.D - It is important to recall that the Third Review Conference considered the accession to the non-proliferation Treaty and acceptance of IAEA safeguards by all States in the Middle East would greatly facilitate the establishment of a nuclear weapon-free zone in the region and the enhancement of the credibility of the Treaty.

Moreover, in light of the results of the IAEA study on the different modalities of application of the Agency's safeguards in the Middle East, all States party, particularly the nuclear-weapon States in their capacity as depositories, are called upon to ensure the adherence of all States in the Middle East and in particular Israel. Furthermore, the application of IAEA safeguards on their respective nuclear activities would contribute in reducing tension and promoting peace and security through ensuring "the total absence of nuclear weapons" in the region.

II.3.E - All States party to the NPT, nuclear as well as non-nuclear, should comply with the provisions of such regional agreements consistent with international law.

II.4 - VERIFICATION AND SAFEGUARD MEASURES

The IAEA has over the years acquired well-deserved credit. It has wide experience in verifying compliance by States with the provisions of different safeguard agreements. In the present field of active disarmament negotiations, this experience should be fully utilized. In this regard:

II.4.A - The nuclear-weapon States party to the Treaty should commit themselves to associating the IAEA with the disarmament agreements which they conclude.

II.4.B - The IAEA should be mandated to undertake a study on the full potential of its verification capabilities, particularly with respect to:

II.4.B.i - Model verification procedures for compliance with the provisions of nuclear weapon-free zones.

II.5 - TEST BAN AGREEMENTS AND PEACEFUL NUCLEAR EXPLOSIONS

Egypt attaches major importance to the urgent conclusion of a comprehensive treaty banning all nuclear weapon testing as the single most important measure in the field of disarmament which will contribute to the strengthening of the NPT régime. Such a measure should lead to ending qualitative improvements of nuclear weapons, new developments of weapons of mass destruction, as well as preventing their proliferation.

It is of paramount importance that the safeguard system embodied in the non-proliferation régime be enhanced and fully respected by the parties to the Treaty. Hence, a clear separation between the military and civilian fuel cycles of the nuclear-weapon States party to the Treaty would greatly enhance the credibility of the safeguard system of NPT.

III. UNIVERSALITY

Egypt firmly believes that the maintenance of international peace and security necessitates that the non-proliferation régime be universally applicable.

For this reason Egypt proposed the initiation of an informal dialogue between the States party to the NPT and States non-party to it.

The objective of these informal consultations would be to inject new life and momentum into the nuclear disarmament process, to further promote peaceful co-operation in the field of nuclear energy and to encourage non-parties to adhere to the NPT in order to ensure its universality.

The informal gathering of the "Friends of the NPT" in Vienna could serve as a suitable venue for such consultations.

IV. INTERNATIONAL CO-OPERATION IN THE PEACEFUL USES OF NUCLEAR ENERGY

IV.1 - One of the main purposes of the NPT is to promote international co-operation in the field of peaceful uses of nuclear energy. According to article IV of the NPT, the nuclear-weapon States are under the obligation to assist non-nuclear-weapon States in their endeavour to develop their capabilities for the peaceful use of nuclear technology.

IV.1.A - Such measures should be considered so as to give preferential treatment to the parties to the Treaty in facilitating the exchange of information, technical capacity, as well as financial ability to develop their peaceful nuclear programmes.

IV.1.B - The present financial resources available to the IAEA in general and in particular the resources allocated to promotional and technical co-operation activities are not commensurate with the obligation referred to in the Treaty. These resources should be increased considerably. The nuclear-weapon States party to the Treaty in particular, as well as the non-nuclear-weapon developed countries in general, are requested to increase their contributions to the IAEA activities in those fields in order to allow the acquisition of nuclear technology by developing countries.

IV.1.C - Nuclear-weapon States and other developed countries are called upon to take concrete measures to provide funds through the international finance institutions so as to assist in financing the nuclear power programmes of the non-nuclear-weapon States party to the Treaty. International finance and development institutions should extend soft loans and credit lines to meet the needs of nuclear power programmes of these countries.

IV.1.D - It is the hope that the Board of Governors of IAEA would make available the results of the scientific meetings held by the Agency, with the aim of providing the latest technological and scientific developments in the area of nuclear technology to all concerned.

IV.2 - Non-nuclear-weapon States party to the Treaty that have embarked on peaceful nuclear programmes should be assured that their programmes shall not be endangered; such assurances should include the following:

IV.2.A - The parties to the Treaty should not attack or threaten to attack the safeguarded nuclear facilities.

IV.2.B - The parties to the Treaty should provide assistance upon request to non-nuclear-weapon States party to the Treaty subject to an attack against their safeguarded nuclear facilities.

IV.2.C - The parties to the Treaty should refrain from providing any sort of nuclear co-operation or assistance to any State which attacks a safeguarded nuclear facility in a non-nuclear-weapon State party to the Treaty.

**Fourth Review Conference
of the Parties to the Treaty
on the Non-Proliferation of Nuclear Weapons**

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AUSTRALIA, AUSTRIA, BELGIUM, CANADA, CZECH AND SLOVAK
FEDERAL REPUBLIC, DENMARK, FINLAND, GERMAN DEMOCRATIC
REPUBLIC, FEDERAL REPUBLIC OF GERMANY, GREECE, HUNGARY,
IRELAND, ITALY, JAPAN, LUXEMBOURG, NETHERLANDS, NORWAY,
POLAND, SWEDEN, SWITZERLAND, UNITED KINGDOM OF
GREAT BRITAIN AND NORTHERN IRELAND, UNITED STATES OF
AMERICA, UNION OF SOVIET SOCIALIST REPUBLICS

Article III: Proposal for inclusion in the Final Declaration

The following proposal is submitted for consideration as an inclusion in
the Final Declaration:

"The Conference notes with satisfaction that a number of States
Parties engaged in the supply of nuclear material and equipment have met
regularly as what has become known as the Zangger Committee in order to
co-ordinate the implementation of article III.2. These States have
adopted certain minimum standard requirements for IAEA safeguards in
connection with their exports of certain items to non-nuclear-weapon
States not Party to the Treaty. The Conference urges all States to
accept the agreed requirements. The Conference recommends the continued
development of the list of items triggering IAEA safeguards and of the
procedures for implementation, taking into account advances in technology
and changes in procurement practices. The Conference recommends the
States Parties to consider further ways to improve the measures to
prevent diversion of nuclear technology for nuclear weapons or other
nuclear explosive purposes while ensuring that the benefits of the
peaceful applications of nuclear technology are available to all Parties
to the Treaty.
